

NOTES ON SOME CENTIPEDES AND MILLIPEDES  
FROM UTAH

BY RALPH V. CHAMBERLIN

The centipeds and millipeds noticed in this paper were collected mostly by the writer during the spring of 1924, the greater portion of them coming from Washington County and adjacent parts of southwestern Utah. To these were added specimens collected in the same region by Mr. V. M. Tanner, to whom I wish here to express my thanks. In addition to the material from southern Utah, the paper deals also with some forms taken by myself farther north, chiefly in Salt Lake and Cache Counties, Utah.

## CHILOPODA

*Oabius paiutus* Chamberlin, sp. nov.

Brown to yellow, the head and posterior legs tending to have an orange tinge. Antennæ short; composed of twenty articles. Ocelli five or six, in two series, the single ocellus enlarged. Ventral spines of first legs, 0, 0, 0, 2, 1-0, 0, 1, 1 (2), 1. Dorsal spines of twelfth legs, 0, 0, 3, 1, 1. Dorsal spines of penult legs, 1, 0, 3, 1, 1; ventral, 0, 1, 2, 3, 2; claws, 2. Dorsal spines of anal legs 1, 0, 3, 1, 0; ventral, 0, 1, 3, 2, 0; claw single. None of the coxæ laterally armed. Claw of gonopods of female tripartite, but the outer lobe almost obliterated, the claw for the most part appearing essentially bipartite, the lobes short; basal spines, 2 + 2. Anal legs of male unmodified. Length, up to 7 mm.

Locality. Utah: Parowan Canyon. May, 1924. Many specimens.

*Tidabius zionicus* Chamberlin, sp. nov.

Agrees with *To. bonwillensis* Chamb. and differs from other species of the genus in having the basal spines of the female gonopods 3 + 3. It differs from *bonwillensis* in having only two claws on the anal legs instead of three. Articles of antennæ up to thirty, mostly very short. Ocelli few, in two series. Third article of first four pairs of legs unarmed ventrally. Ventral spines of anal legs, 0, 1, 3, 2, 0. Dorsal spines of penult legs, 0, 0, 3, 1, 0. Length, up to 8.25 mm.

Locality. Utah: Zion National Park. May, 1924.

*Lophobius loganus* Chamberlin, sp. nov.

Dorsum yellowish brown; head more orange anteriorly. Legs yellow, the caudal pair of an orange tinge. Ocelli eleven, in three series; e. g., 1 + 2, 5, 3. Ventral spines of first legs, 0, 0, 2, 3, 2. Dorsal spines of twelfth legs, 0, 0, 3, 1, 1. Ventral spines of penult legs, 0, 1, 3, 3, 2; dorsal, 1, 0, 3, 1, 1. Dorsal spines of anal legs 1, 0, 3, 1, 0; ventral, 0, 1, 3, 2, 0; the claw unarmed. Last three pairs of

coxæ dorsally armed; only the last coxæ laterally armed. In the male the anal legs have the last joint furrowed along the mesal side, as in the next species; the fourth joint is also similarly modified, bearing a dorsal lobe at distal end, its mesal surface broadly furrowed, also furrowed along ectal surface above. Length, 12 mm.

Locality. **Logan Canyon, Cache County, Utah.** One male and two smaller females.

Nearly related to *L. franciscæ*, but differing decidedly in color, in being broader behind and thus more attenuated cephalad, in having only the last coxæ laterally armed, in having the ventral spines of anal legs, 0, 1, 3, 2, 0 instead of 0, 1, 3, 2, 1, etc.

**Lophobius franciscæ** Chamberlin, sp. nov.

Allied to *L. collium* (Chamberlin). It differs from that species obviously, in being reddish or chestnut instead of yellow or orange. It differs from that species also, in having the ventral spines of the anal legs normally 0, 1, 3, 2, 1, instead of 0, 1, 3, 2, 0, though the latter formula may occasionally hold; also in having only the last two instead of the last three coxæ laterally armed. Antennæ normally with twenty articles, but varying up to twenty-six, the number tending to differ in such cases on the two sides. Basal spines of female gonopods, 2 + 2 or 3 + 3. In the anal legs of both sexes the last article is furrowed along the mesal side. In the anal leg of male the fourth article is conspicuously thickened and is broadly furrowed or excavated on mesal side, the excavation limited above by a ridge-like margin somewhat as in *collium*; at the distal end, above a conspicuous process or lobe. Length, 13 mm.

Locality. **Cedar City, Utah.** May, 1924.

Named for Mrs. Frances (Brown) Chamberlin.

**POKABIUS UTAHENSIS** (Chamberlin)

Localities. Utah: Bear Lake. Many females. Also Logan Canyon. Many specimens, both males and females, but the females much predominating.

A form abundant under damp leaves in shaded places along canyon streams in the northern part of the State.

**LITHOBIUS FORFICATUS** Linne

Locality. Utah: San Pete County, Fairview. Many specimens.

This introduced species has become common about settlements in the more northern part of the State.

**GOSIBIUS ARIZONENSIS** Chamberlin

Localities. Parowan and Cedar Canyons. May. Only males secured.

The specimens agree closely with Arizona individuals, though

apparently somewhat smaller. The spines of the anal legs in one adult male 0, 1, 3, 3, 1 instead of 0, 1, 3, 2, 1.

**Ethopolys parowanus** Chamberlin, sp. nov.

Related to *E. bipunctatus* (Wood), occurring in northern Utah and in Nevada, in having none of the dorsal plates produced. It is a smaller form with shorter antennæ. It differs in having only one tooth ectad of the prosternal spine, the usual formulæ being from 1—4+4—1 to 1—6+6—1. It is also characterized by having the claw of the female gonopods entire, or essentially so, instead of tripartite; basal spines in adults 3, 3, more rarely 2 + 3 or 2 + 2. Ventral spines of anal legs, 1, 1, 3, 2, 0 or 1, 1, 3, 2, 1, the claw single. Ventral spines of penult legs, 1, 1, 3, 3, 2; dorsal spines, 1, 0, 3, 1, 1; claws, three. Length, 21 mm.

Localities. **Utah: Parowan**; also Cedar City. April and May. Many specimens.

**BOTHROPOLYS PERMUNDUS** Chamberlin

Localities. **Utah: Mill Creek Canyon, Logan Canyon, Bear Lake.**

Many specimens of this species were taken in each of these localities. It is one of the most common chilopods of the Wahsatch Mountains.

**Kethops leioceps** Chamberlin, sp. nov.

Differs from *K. utahensis*, the genotype, in wholly lacking both the paired and the unpaired sulci on cephalic plate. First dorsal plate similar, in having a cervical sulcus and paired sulci that branch and together form a W behind the cervical sulcus. Last dorsal plate wider at caudal than at anterior end, its caudal margin convexly bowed out in the middle, not emarginate. Last ventral plate strongly narrowed caudad. Coxopleuræ with caudal process short; scattered short spines. The anal legs in general form as in *utahensis*; the joints broad but not furrowed ventrally; femur with a median ventral area free from spines, toward mesal side of ventral surface a series of four stout spines or teeth. Tibia also with a series of four ventral teeth. Metatarsus with a ventral series of close-set teeth, not with an edge excised at middle as in *utahensis*. Length, 24 mm.

Locality. **Utah: Mill Creek Canyon.** One specimen.

**THEATOPS POSTICUS** (Say)

Locality. **Utah: Washington County.** May. One specimen.

This species is very common in the Southeastern States, but has not been known previously from the West.

**OTOCRYPTOPS SEXSPINOSUS** (Say)

Locality. **Utah: Zion National Park.** May. One young specimen.

There is little doubt that the specimen is correctly referred, although the margination of the head is obscure. The species is common, both in the Eastern and Southeastern States and on the Pacific Coast.

SCOLOPENDRA POLYMORPHA Wood

Localities. Utah: Washington, St. George and Zion National Park. April and May, 1924.

This species ranges northward in the State as far as Salt Lake City. The Utah specimens are dwarfed, in comparison with those found in Arizona and southern California.

*Scolopendra utahana* Chamberlin, sp. nov.

Head without longitudinal sulci, smooth and shining, obscurely finely punctate. Antennæ short; articles twenty, of which only the first four are nearly glabrous. First dorsal plate with a strongly marked cervical sulcus like that of *S. polymorpha*; without longitudinal sulci. Last dorsal plate short and broad; with a fine median longitudinal impressed line. Dental plates of prosternum each with four teeth, of which the three innermost are united at base. Anal legs short; femur short and thick with about fifteen seriate spines ventrally, none on mesal surface except the series of five teeth along dorso-mesal edge; process at dorso-distal corner bearing only two teeth, which are long. Length, 45 mm.

Locality. Utah: Zion National Park. May.

Resembles *S. polymorpha* Wood, but readily distinguished, in having only the first four articles of antennæ glabrous instead of eight or more, in having the distal process of femora of anal legs with only two spines, and in having the mesal surface of femora free from spines.

*Nyctunguis molinor* Chamberlin, sp. nov.

Body yellow, near orange, the middle and posterior segments also of an orange or red tinge. The cephalic plate longer than wide, longer than in *libercolens*, a species it resembles; widest in front of middle from where more strongly narrowed caudad than cephalad; anterior margin forming an obtuse angle. Prebasal plate exposed. All joints of prehensors unarmed; claws when closed failing considerably of attaining the front margin of head. Labrum wide, somewhat as in *libercolens*, but the median arc deeper and shorter, the teeth proportionately larger and fewer, typically ten in number. Ventral pores present on anterior plates, forming a small circular area on each plate. Last ventral plate broadly trapeziform, not strongly narrowed caudad. The coxal pores two on each side, homogenous, the anterior one covered by last ventral plate, the posterior one partly covered; posterior gland much larger than the anterior one. Pairs of legs, 47 (♂), 49 (♀). Length, 17 mm.

Locality. **Utah**: At mouth of **Mill Creek Canyon**. One male and one female. May.

**Geophilus shoshoneus** Chamberlin, sp. nov.

A species resembling the Eastern *G. mordax*, but a much smaller form, easily distinguished in not having the prebasal plate exposed, the cephalic plate extending well over it. Claws of prehensors, when closed, attaining anterior margin of head. Prosternum and joints of prehensors unarmed. Chitinous lines present on prosternum, fine. Antennæ short. Ventral pores of sternites numerous, forming a transverse band broadest at middle in front of posterior margin. Last ventral plate wide, the posterior margin a little indented at middle. Coxal pores four or five on each side close to margin of plate, with no isolated single pore such as is characteristic of *mordax*. Pairs of legs, 55-57. Length, 20 mm.

Locality. **Utah**: **Logan Canyon** and on the divide between this canyon and Bear Lake Valley. Two specimens.

GEOPHILUS RUBENS Say

Locality. **Utah**: Washington County. Three specimens. May.

A species also met with frequently in Arizona. The **Utah** specimens agree with those from Arizona, in usually lacking a geminate black stripe along dorsum.

LINOTÆNIA CHIONOPHILA (Wood)

? *Geophilus acuminatus* Leach, Trans. Linn. Soc. Lond., 1814, 11, p. 386.

*Strigamia chionophila* Wood, Journ. Phil. Acad. Sci., 1862, 5, p. 50.

*Linotænia miuropus* Chamberlin, Amer. Nat., 1902.

*Scolioplanes acuminatus* Attems, Arkiv for Zoologi, 1909, 5, No. 3, p. 25.

*Linotænia chionophila* Chamberlin, Can. Ent., 1911, p. 260.

Localities. **Utah**: Parowan, one male; Trout Creek, two specimens; Bear Lake, one male; Logan, many specimens.

All specimens examined have thirty-nine or forty-one pairs of legs, excepting one specimen from Logan Canyon, which seems also variant in other respects.

GNATHOMERIUM XENOPORUS (Chamberlin)

Localities. **Utah**: Parowan, Cedar City, Mill Creek Canyon, Logan Canyon. Many specimens.

This is evidently the most common geophilid in the canyons of **Utah**, where it is often abundant in leaf mold along streams. It occurs also in Colorado and New Mexico.

## DIPLOPODA

## PARAJULUS CANADENSIS (Newport)

Locality. Utah: Mill Creek Canyon. April. Two males.

This is a common species in eastern Canada and adjacent parts of the United States, but it has not previously been found west of the Rocky Mountains.

## PARAJULUS TIGANUS Chamberlin

Localities. Utah: Mill Creek Canyon, Provo Canyon, Logan Canyon, and Bear Lake. Many specimens.

This is probably the commonest diplopod in the State. It has not been found as far south as Cedar City, however, where it seems to be largely replaced by *P. paiutus*, a new species here described.

**Parajulus paiutus** Chamberlin, sp. nov.

This is a smaller form than *P. tiganus*. The color is brownish with a row of black spots along each side, corresponding to the repugnatorial glands, and a median dorsal longitudinal black line. A geminate lighter band across dorsum between the lateral spots on each segment. Last segment darker, blackish. Legs yellow. Antennæ blackish. Distocaudal corner of cardo of mandible in male conspicuously produced, not excavated, the angle narrowly rounded. First legs thickened as usual, but less so than in *tiganus*. Gonopods of male of very different form from those of *tiganus*, being more like those of *P. nigrans*. Both lobes of anterior pair short; posterior lobe glabrous, narrower than anterior, a little bent forward distally. Posterior gonopods narrowed distally, a little curved caudad distally, the seminiferous duct opening at the caudally directed tip, much as in *nigrans*. Number of segments, 54. Length, male, 27 mm.

Localities. Utah: Parowan, nine specimens, in part not adult, taken in canyon above the town; Cedar City, four specimens also taken in canyon above town; and Zion National Park, one female.

**Tylobolus utahensis** Chamberlin, sp. nov.

A form more slender than usual in the genus, the length being ten times the thickness. Brown in color, the metazonites darker brown, with a tendency toward chestnut, the ectal caudal border paler. Repugnatorial glands showing as blackish spots on the sides, especially in the posterior region. Legs brown. Collum much narrowed at each end. Coxæ of third legs in male with the usual uncate processes, the immediately following coxæ also produced. Median plate of anterior gonopods of male distally pointed, much exceeded by the coxal plates, which are contiguous at middle and each of which at its mesal corner is produced ventrad. The telopodite is

somewhat enlarged at distal (mesal) end, but is only a little bent caudad at the end, not uncate. In the posterior gonopods the terminal hook or blade is smooth; at base of hook in the angle is a stout angular projection or tooth; the bent portion proximad of blade finely scabrous. Number of segments, 51-53. Length, 54 mm.; width, 5.2 mm. Female allotype, 7 mm. thick.

Locality. **Utah: Zion National Park.** Five adult males, two adult females, and two young specimens.

NANNOLE UTA (Chamberlin)

Locality. **Utah: Little Willow Canyon.**

DIPLOIULUS LUSCUS (Meinert)

Locality. **Utah: Mill Creek.**

Many specimens were taken on cultivated ground below mouth of the canyon. The species is now not uncommon in other places near Salt Lake City. A native of Europe, it is frequently brought to this country in soil about the roots of plants from Holland and other European countries. It long ago became established in the Eastern States and has now extended its range to California. It occurs only in settled or cultivated districts.

**Scytonotus orthodox** Chamberlin, sp. nov.

General color brown, in part of a weakly reddish tinge. Legs yellow. The second tergite bearing four well-developed series of tubercles; the anterior corners of keels produced along ends of collum, acute; lateral crenulations weak, with a translucent margin. In tergites of the middle region of body a transverse sulcus distinctly marked, behind the sulcus with three or in part four rows of well-developed tubercles, but in front of the sulcus the tubercles are low and are in part obliterated. Prozonites nearly smooth, the granules numerous, but very small or obscure. Distinguishable in structure of the male gonopods; the two blades equal in length, rather slender, the posterior one bidentate apically on caudal side, the teeth acute; anterior branch apically acute, with caudal margin straight and anterior convex. Gonopods very similar to those of *S. amandus*; but in the latter the branches are unequal, the dentate one being obviously shorter and its teeth closer together.

Localities. **Utah: Logan Canyon**, five adult males and three partly grown specimens; **Bear Lake**, about eighteen specimens, male and female, with some immature.

The young specimens do not show any reduction of the tubercles in front of the suture.

**Spirostrephon utorum** Chamberlin, sp. nov.

The color is light yellowish brown without distinct markings. Be-

tween the median keel and the thickened porigerous keel on each side of a typical segment there are three major setigerous keels, with a much lower non-setigerous keel between each two major ones; the porigerous keel much higher than these more mesal keels and its margin conspicuously convex in profile instead of nearly straight; below each porigerous keel two somewhat similarly high setigerous keels with a low, non-setigerous keel between these and one above the upper one; below on the side other non-setigerous keels which become lower in going ventrad. The major keels in profile are seen to be serrate or dentate. Number of segments, sixty.

Locality. **Utah: Green River.** One male. R. V. Chamberlin, Jr., collection 1920.

Apparently related to *S. mutans* of Southern California; but aside from more technical structural differences, it is conspicuously distinct in coloration and in the greater number of segments to the body.

#### ***Tingupa utahensis australis* Chamberlin, subsp. nov.**

In the absence of males a wholly certain determination of the position of this form is not possible. It agrees in general structure, the form and sculpturing of the tergites, etc., with typical *utahensis* from the northern part of the State, but it is a larger and more robust form. Color brown, the caudal border of metazonites paler, as is the prozonite in the constricting furrow adjacent to metazonite. Sixth and seventh articles of antennæ equal in length, the fifth much longer and distally slightly thicker than the sixth. The eye-patch is differently shaped, being trapeziform rather than triangular, with the dorsal side, rather than that along caudal margin, longest; ocelli in the holotype in six or seven vertical series instead of in four; e. g., beginning with most caudal row, 5, 4, 3, 2, 2, 1; and in four or five transverse, somewhat curving, series, e. g., beginning at top, 1, 7, 5, 3, 1. Length, about 9 mm.

Locality. **Cedar City, Utah.** One female taken in the canyon. May.

#### ***Underwoodia tida* Chamberlin, sp. nov.**

A much smaller form than *hespera*, differing superficially also in being distinctly paler in color on the sides below level of pores than on dorsum; finely mottled. Legs dusky yellow. Antennæ of same color as legs. Head dark above in frontal region with numerous fine, pale dots, clypeus yellow. Sixth joint of antennæ decidedly thicker and longer than the seventh. Ocelli in a triangular patch with apex mesad; thirteen in number, arranged in three or four oblique series, e. g., 6, 5, 2 or 1, 5, 5, 2. Collum not distinctly margined below. Length, 6 mm.

Locality. **Utah: Logan Canyon.**



**Underwoodia hespera** Chamberlin, sp. nov.

The body in general is brown, with the metazonites darker, light spots on each side indistinct. Head dark, black, or nearly so. Legs dusky over yellow or light brown, the antennæ blackish. In the antennæ the sixth article is narrower than the fifth and is obviously and considerably longer than the seventh instead of being equal to it, as is the rule in species of *Cleidogona*. Ocelli distinct; eighteen, in five somewhat irregular longitudinal series, as follows: 1, 2, 4, 5, 6; the patch triangular in outline, with the apex mesad in position. Body strongly narrowed anteriorly. Collum acutely narrowed down each side, margined anteriorly on each side, otherwise smooth. Segments in general smooth, not striate above, under lens seen to be evenly marked with areas defined by fine lines, the areas mostly from quadrate to oblong in form. Length, 8 mm.

Locality. **Utah: Mill Creek Canyon.** One female.

POLYDESMUS MONILICORNIS Koch

Locality. Mill Creek. One immature specimen, apparently this form, which is common in the Eastern States and Canada.

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NOTES ON LOPHOCERAMICA ARTEGA BARNES  
(LEPID., PHALAEINIDÆ)

BY WILLIAM BARNES AND F. H. BENJAMIN

*Decatur, Illinois*

LOPHOCERAMICA ARTEGA Barnes

1907, Barnes, Can. Ent., XXXIX, 64, *Tricholita*.

1908, Dyar, Proc. Ent. Soc. Wash., X, 32, *Lophoceramica*.

1912, Barnes & McDunnough, Contrib. N. H. Lep. N. A., I, (4), 21, pl. IX, f. 20; p. 55, pl. XXVI, f. 11, *Lophoceramica*.

*pallicauda* Sm.

1908, Smith, Ann. N. Y. Acad. Sci., XVIII (2), 101, *Mamestra*.

**Lophoceramica artega form eriopygoides** nov.

*artega* Auct. (nec Barnes).

1912, Barnes & McDunnough, Contrib. N. H. Lep. N. A., I, (4), 21, pl. IX, f. 19, p. 55, pl. XXVI, f. 10, *Lophoceramica*.

The form of *artega* lacking, or practically lacking, the white on the reniform appears to be causing some confusion, so we designate it as *eriopygoides*. It is a parallel development to *Chabuata endiva* form *vespera*.

Type localities and number and sexes of types: Holotype ♂, Paradise, Cochise County, Arizona, 1-7 July; allotype ♀, id., 1-7 June; 5 ♂ 2 ♀; paratypes, Paradise, Baboquivari Mountains, Palmerlee, and Patagonia, Arizona, June, August, September.

*Note*—In Barnes collection; a single female paratype in California Academy of Sciences, having been submitted for determination by Mr. E. P. Van Duzee.